United States Patent

Quay

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[54] IDENTIFICATION AND CLASSIFICATION OF SEISMIC REFLECTION VELOCITY PROPERTIES ON SEISMIC REFLECTION SECTIONS

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[52] **U.S. Cl.** .....**340/15.5 DS,** 340/15.5 R, 340/15.5 DP

[51] **Int. Cl.** **G01v 1/00**

[58] **Field of Search**.....340/15.5 DP

[56] **References Cited**

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[57] **ABSTRACT**

Velocity information is superimposed on a conventional seismic reflection section using either a transparent overlay or an optical projection. Isodepth lines are used for conventional reflection time sections and iso-time lines are used for reflection depth sections. The isodepth lines could be in the order of every 1000 feet but would depend on the time scale used on the reflection time section. Iso-time lines spaced ten milliseconds apart could be appropriate for a long depth scale and fewer lines could be used for a smaller scale.

The change in spacing between these lines for specific reflections denotes a change in the interval velocity, hence stratigraphic changes which can be used to locate stratigraphic traps for minerals. The isodepth lines also permit conversion of seismic reflections on a reflection time section to depth lines. Iso-time lines convert data on a reflection depth section to a time scale.

Either isodepth lines or iso-time lines can be used to identify changes in interval velocities for specific zones of interest, to determine the average vertical velocity to selected reflections, and to show where velocity anomalies exist.

7 Claims, 7 Drawing Figures